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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	BW-DKT01013B
First Inventor	Gardner et al
Title	Torsional Assisted Multi-position
Express Mail Label No.	EV08988 4061

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

ADDRESS TO:

Mail Stop Patent Application
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

1. ☒ Fee Transmittal Form (e.g., PTO/SB/17)
(Submit an original and a duplicate for fee processing)
2. ☐ Applicant claims small entity status.
See 37 CFR 1.27.
3. ☒ Specification [Total Pages 18]
(preferred arrangement set forth below)
 - Descriptive title of the invention
 - Cross Reference to Related Applications
 - Statement Regarding Fed sponsored R & D
 - Reference to sequence listing, a table, or a computer program listing appendix
 - Background of the Invention
 - Brief Summary of the Invention
 - Brief Description of the Drawings (if filed)
 - Detailed Description
 - Claim(s)
 - Abstract of the Disclosure
4. ☒ Drawing(s) (35 U.S.C. 113) [Total Sheets 4]
5. Oath or Declaration [Total Sheets 2]
 - a. ☐ Newly executed (original or copy)
 - b. ☒ Copy from a prior application (37 CFR 1.63(d))
(for continuation/divisional with Box 18 completed)
 - i. ☐ **DELETION OF INVENTOR(S)**
Signed statement attached deleting inventor(s) name in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
6. ☒ Application Data Sheet. See 37 CFR 1.76

7. ☐ CD-ROM or CD-R in duplicate, large table or Computer Program (Appendix)
8. Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary)
 - a. ☐ Computer Reader Form (CRF)
 - b. Specification Sequence Listing on:
 - i. ☐ CD-ROM or CD-R (2 copies); or
 - ii. ☐ Paper
 - c. ☐ Statements verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

9. ☐ Assignment Papers (cover sheet & document(s))
10. ☐ 37 CFR 3.73(b) Statement ☒ Power of Attorney
(when there is an assignee)
11. ☐ English Translation Document (if applicable)
12. ☒ Information Disclosure Statement (IDS)/PTO-1449 ☒ Copies of IDS Citations
13. ☐ Preliminary Amendment
14. ☒ Return Receipt Postcard (MPEP 503)
(Should be specifically itemized)
15. ☐ Certified Copy of Priority Document(s)
(if foreign priority is claimed)
16. ☐ Nonpublication Request under 35 U.S.C. 122 (b)(2)(B)(i). Applicant must attach form PTO/SB/35 or its equivalent.
17. ☒ Other: Letter to Examiner Chang

18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in the first sentence of the specification following the title, or in an Application Data Sheet under 37 CFR 1.76:

☒ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.: 10/198,318

Prior application information:

Examiner Chang, ChingArt Unit: 3748

For CONTINUATION OF DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

19. CORRESPONDENCE ADDRESS

☒ Customer Number: 32175 OR ☐ Correspondence address below

Name			
Address			
City	State	Zip Code	
Country	Telephone	Fax	

Name (Print/Type)	Meghan Van Leeuwen	Registration No. (Attorney/Agent)	45,612
Signature	<u>Meghan Van Leeuwen</u>	Date	<u>11/14/03</u>

This collection of information is required by 37 CFR 1.53(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop Patent Application, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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22141 U.S. PTO
10/714159



111403

FEE TRANSMITTAL for FY 2004

Effective 10/01/2003. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$ 770.00)

Complete if Known

Application Number
Filing Date November 14, 2003
First Named Inventor Gardner et al
Examiner Name
Art Unit
Attorney Docket No. BW-DKT01013B

METHOD OF PAYMENT (check all that apply)

☒ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None

☒ Deposit Account:

Deposit
Account
Number
Deposit
Account
Name

02-0910

Brown & Michaels, PC

The Director is authorized to: (check all that apply)

☐ Charge fee(s) indicated below ☒ Credit any overpayments

☒ Charge any additional fee(s) or any underpayment of fee(s)

☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.

FEE CALCULATION

1. BASIC FILING FEE

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1001	770	2001	385	Utility filing fee	770.00
1002	340	2002	170	Design filing fee	
1003	530	2003	265	Plant filing fee	
1004	770	2004	385	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	
SUBTOTAL (1)					(\$ 770.00)

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

		Extra Claims		Fee from below		Fee Paid	
Total Claims	14	-20** =		X	18.00	=	0.00
Independent Claims	2	-3** =		X	86.00	=	0.00
Multiple Dependent						=	

Large Entity		Small Entity		Fee Description
Fee Code	Fee (\$)	Fee Code	Fee (\$)	
1202	18	2202	9	Claims in excess of 20
1201	86	2201	43	Independent claims in excess of 3
1203	290	2203	145	Multiple dependent claim, if not paid
1204	86	2204	43	** Reissue independent claims over original patent
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) (\$ 0.00)

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Small Entity

Fee Code	Fee (\$)	Fee Code	Fee (\$)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for <i>ex parte</i> reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	420	2252	210	Extension for reply within second month	
1253	950	2253	475	Extension for reply within third month	
1254	1,480	2254	740	Extension for reply within fourth month	
1255	2,010	2255	1,005	Extension for reply within fifth month	
1401	330	2401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	
1403	290	2403	145	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,330	2453	665	Petition to revive - unintentional	
1501	1,330	2501	665	Utility issue fee (or reissue)	
1502	480	2502	240	Design issue fee	
1503	640	2503	320	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	770	2809	385	Filing a submission after final rejection (37 CFR 1.129(a))	
1810	770	2810	385	For each additional invention to be examined (37 CFR 1.129(b))	
1801	770	2801	385	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify)

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$ 0.00)

SUBMITTED BY

(Complete if applicable)

Name (Print/Type) Meghan Van Leeuwen Registration No. 45,612 Telephone (607) 256-2000
Signature Date 11/14/03

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November 14, 2003

CHING CHANG
United States Patent and Trademark Office
Commissioner for Patents
P.O.Box 1450
Alexandria, Virginia 22313-1450

Re: Continuation Application based on Application No. 10/193,318
Title: TORSIONAL ASSISTED MULTI-POSITION CAM INDEXER
HAVING CONTROLS LOCATED IN ROTOR
Filing date: November 14, 2003
Our docket no.: BW-DKT01013B

Dear Examiner Chang:

This letter accompanies a continuation application filed today, November 14, 2003. The continuation application is a continuation of U.S. Application No. 10/198,318, filed July 18, 2002.

In order to expedite prosecution of the continuation application, this letter explains the amendments made in the continuation application.

Although the parent case was in condition for allowance, the Applicants opted to file a continuation application to better focus the claims, and to obviate the need for a terminal disclaimer.

Briefly, claim 7 has been incorporated into claim 1, and claim 15 has been incorporated into claim 8 (claim 9 in the parent case). These claims now state that the inlet check valve is located in the rotor.

This amendment is fully supported by the parent application, as filed. No new matter has been added. Specifically, the title reflects the controls located in the rotor ("...HAVING CONTROLS LOCATED IN THE ROTOR"). One of these controls is the inlet check valve.

In addition, the summary of the invention and the abstract describe the phaser and the inlet check valve.

"The present invention is an infinitely variable camshaft timing device (phaser) with a control valve located in the rotor. Since the control valve is in the rotor, the camshaft need only provide a single passage for supplying engine oil or hydraulic fluid, and does not need multiple passageways for controlling the phaser, as was the prior art. The main advantage to putting the spool in the rotor is to reduce leakage and to improve response of the phaser. This design allows for shorter fluid passages when compared to a control system mounted at the cam bearing.



The rotor is connected to the camshaft, and the outer housing and gear move relative to the rotor and camshaft. Source oil is supplied through the center of the camshaft. In a preferred embodiment, the oil passes through an inlet check valve and is ported to the center of the spool valve. The inlet check valve eliminates oil from back flowing through the source during a torque reversal. The position of the spool valve determines if the phaser will advance or retard.” (present application, SUMMARY OF THE INVENTION, emphasis added).

“An infinitely variable cam indexer utilizes engine oil pressure to actuate a cam and preferably uses an inlet check valve (105) in the oil source to minimize back flow during a torque reversal. The control system is in the center of the rotor (1) and uses an electromechanical actuator, preferably a variable force solenoid (103), acting directly on the spool (104) to control oil flow. This design reduces leakage and improves the response of the phaser. There are shorter oil passages as compared to a control system mounted at the cam bearing.” (present application, ABSTRACT, emphasis added).

The claims have also been amended to eliminate the reference to a first and second vane. Anyone skilled in the art would recognize that the invention could be practiced with a vane phaser having any number of vanes. No new matter has been added.

We have also amended the title to read “TORSIONAL ASSISTED MULTI-POSITION CAM INDEXER HAVING CONTROLS LOCATED IN ROTOR” instead of “HYBRID MULTI-POSITION CAM INDEXER HAVING CONTROLS LOCATED IN ROTOR”. The new title more accurately describes the VCT system in the application. No new matter has been added.

Applicants believe the claims, as amended, are patentable over the prior art, and that this case is now in condition for allowance of all claims therein. Such action is thus respectfully requested. If the Examiner disagrees, or believes for any other reason that direct contact with Applicants' agent would advance the prosecution of the case to finality, he is invited to telephone the undersigned at (607)-256-2000.

Very truly yours,

Meghan Van Leeuwen
Registered Patent Agent, Reg. No. 45,612
Brown & Michaels, P.C.